

OPTICAL DETECTOR OF ORGANIC ANALYTE**ABSTRACT**

The invention is directed to techniques for optically detecting changes in concentration of analytes in the body of a patient via fluorescent resonant energy transfer (FRET). An analyte detector implantable in the body of the patient includes a plurality of fluorophore-tagged sensing elements that bind to a specific analyte. A light emitter emits energy at a wavelength that is within the absorption spectrum of a donor fluorescent dye, and a light detector detects the energy fluoresced by donor and acceptor fluorescent dyes in the analyte detector. The relative intensity of energy fluoresced by the dyes is a function of the concentration of the analyte. A processor monitors the change in concentration of the analyte over time and may take action, such as directing the therapy device to administer therapy, when the change in concentration surpasses a predetermined threshold.